

5 Johnson STEAM Academy Magnet School, Cedar Rapids, Iowa, USA

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1. Context

Johnson Science, Technology, Engineering, Art, and Mathematics (STEAM) Academy Magnet School (JSA) is a Magnet Schools of America Certified with Distinction Demonstration School⁶ located in Cedar Rapids, Iowa, in the USA. Embedding STEAM themes across content areas creates an engaging and innovative learning experience for JSA students that positively impacts their future and ignites their passion for learning. As of June 2021, 379 students are enrolled in grades Kindergarten (five years of age) through Grade 5 (ten years of age). The school population is 42% white and 58% non-white, with subgroups of 39% African American, 12% Mixed Race, and 7% Hispanic/Latino. It does not house a program for English language learners, who are served by other schools in the District. JSA has a 20% homelessness rate and a transiency^{*7} rate of 25%. Prior to the global pandemic, 77% of JSA students were eligible for Free and

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6. At the time of their designation as a Magnet Schools of America Demonstration School, JSA was one of only 13 elementary schools in the USA with that distinction. Magnet Schools of America defines a magnet school as “the single largest form of public school ‘choice’, magnet schools are visionary, innovative and open to all students regardless of zip code... each school typically focuses on individually themed curricula”.

7. An explanation for terms followed by an asterisk can be found in the glossary: <https://doi.org/10.14705/rpnet.2022.55.1367>

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Reduced Lunch. However, through the US Government Community Eligibility Program, the entire school population currently receives free breakfast and lunch at school.

The school building and grounds occupy one city block in an older, residential neighborhood known as Wellington Heights. Most students walk or get rides to and from school. Ten percent of the students enroll as lottery students (they apply and are randomly selected) and come from other areas around the city, and bus transportation is provided. In the last five years, schoolwide reading scores have fluctuated between 44% and 55% of students scoring proficient (at grade level) on state accountability measures.

The building that houses JSA has been a neighborhood school for over a century. American poet and novelist Paul Engle grew up in the area and the Paul Engle Association for Community Arts exists today to further his passion for the arts. JSA has an extensive extracurricular after school program as well as before and after school care, and JSA families see the school as a vital stakeholder in their community.

2. Implementation

In spring 2020, the JSA literacy leaders were at a decision point on how to spend available funds to explore effective literacy practices and think ‘outside the box’ to support student achievement. Funds for literacy efforts had been donated by a local church, and JSA had Every Student Succeeds Act (ESSA, US government) funds to be used on school improvement priorities. Members of the Propel Literacy Forward (Propel) leadership team had been investigating effective literacy instructional practices and had come across [John Walker’s blog](#)⁸ and information about the Sounds-Write synthetic phonics approach. Finding the information promising and in alignment with their professional beliefs, they implemented elements of Walker’s approach in first and second grade small

8. <https://theliteracyblog.com>

reading groups with success. Students were engaged and excited when they participated in the Sounds-Write Word Building and Sound Swap routines. Teachers celebrated when students quickly learned and applied the concept that letters are symbols (spellings) that represent sounds. Teachers were intrigued by the concept of teaching sounds in words instead of in isolation. As a result of this practical success, the Propel team voted to invite additional team members as well as interested staff to engage in the summer Sounds-Write training in order to begin instruction by fall of 2020.

In early summer 2020, six JSA teachers, two coaches, and four Grant Wood Area Education Agency support team members took the online Sounds-Write practitioner’s training with a UK Trainer. Fourteen more JSA teachers completed the training throughout the 2020/2021 school year and into summer 2021. As a result of this teacher-driven grassroots, organic effort, within one calendar year (during the once-in-a-century pandemic), 75% of the JSA certified staff that teach reading became Sounds-Write practitioners. Teacher buy-in was immediate and robust. Enthusiasm and support for Sounds-Write was, and continues to be, extremely high.

At JSA, Sounds-Write is taught whole group, small group, and one-to-one depending on the grade level and student need. Student response to Sounds-Write lessons was immediately positive due to the high level of engagement, reduced cognitive load and rigor of this program. Sounds-Write is taught in Grades 1 and 2, to complement our literacy programming which also includes interactive read alouds and writing practices. Sounds-Write is taught in Grades 3 to 5 as an intervention to accelerate student learning of the alphabetic code, and explicitly teach and practice skills of segmenting, blending, and phoneme manipulation.

3. Evaluation

Data results were very encouraging even though we taught our first year of Sounds-Write during a global pandemic and an unprecedented natural disaster

in Iowa (August 2020 Midwest Derecho⁹) which delayed the start of the school year by four weeks.

3.1. First grade text reading proficiency state assessment

In spring 2021, 38% of our first-graders were proficient on the text reading subtest of the State of Iowa assessment, known as Curriculum-Based Measures Reading¹⁰ (CBMR). Prior years' data (2017-2018 and 2018-2019) showed 32% and 33% proficiency, so our team was encouraged by the 5-6% increase in text reading by our first-graders. Despite a month's delay to the start of the 2020/2021 school year due to the August 2020 Midwest Derecho and three weeks of all-school remote learning in November 2020 caused by the global pandemic, our students showed growth on our end-of-year state assessment (Table 1).

Table 1. JSA CBM-Reading spring results

	17-18	18-19	19-20	20-21
Word Segmenting	76%	68%	-	73%
Nonsense Word Reading	52%	52%	-	52%
Sight Words	36%	45%	-	38%
CBMR (one minute read of three short passages)	33%	32%	-	38%

As we dug deeper into the data, we discovered that overall student proficiency on the State of Iowa assessment was higher in classrooms where Sounds-Write was taught the **entire** school year. We tracked first and second grade in-person classrooms where Sounds-Write was taught the entire year versus all classrooms, which included those rooms where Sounds-Write was taught only part of the year (due to the fact that teachers were trained at different times during the year). The greatest improvement was seen in first-graders: 48% of the students in the Sounds-Write classrooms were proficient compared to only 40% of students in all classrooms. In second grade classrooms, the difference was smaller but still

9. A derecho is a widespread wall of very strong winds that result in severe thunderstorms, tornadoes, torrential rains, and flash floods; https://en.wikipedia.org/wiki/August_2020_Midwest_derecho?srltybrkr=65d2fd65

10. <https://my.vanderbilt.edu/specialeducationinduction/files/2013/07/IA.Reading-CBM.pdf>

showed that Sounds-Write classrooms did better; the Sounds-Write classrooms were 33% proficient versus 32% in all classrooms.

3.2. Individual Education Plan (IEP) and English language learners

Our special education team witnessed multiple successes with their IEP students. For the purpose of this chapter, we selected one student from each grade level (Table 2).

A first-grader grew by 79 Words Per Minute (WPM). The benchmark expected reading growth for first grade is 54 WPM. A second-grader grew by 41 WPM – about the same as the expected growth of 45 WPM. A third-grader and a fourth-grader increased their WPM by 51 words – significantly above the expected growth for those grades of 38 and 32 WPM respectively. A fifth-grader attending virtual school all year grew by 29 WPM, very close to the benchmark of 30 WPM.

Table 2. Reading growth for IEP and English as a second language students

	Johnson STEAM Academy				State of Iowa Expected Reading Growth			
	Fall	Winter	Spring	Growth in WPM	Fall	Winter	Spring	Growth in WPM
1st Grader	9	30	88	+79	12	37	66	+54
2nd Grader	25	43	66	+41	56	84	101	+45
2nd Grader (ELL)	7	17	68	+61				
3rd Grader	85	114	136	+51	87	110	125	+38
4th Grader	48	70	99	+51	115	133	147	+32
5th Grader	44	59	73	+29	132	149	162	+30

Our special education teachers were riveted by these increases, which they had not seen using other phonics programs. They saw increased engagement by students who in the past had often felt defeated when it came to reading. Small successes early in the program propelled these students forward and

helped them make significant gains, which teachers believed would not have happened without our Sounds-Write implementation. For example, the fourth-grader who made above-average progress of +51 WPM had only achieved below average progress in previous years before Sounds-Write had been implemented: +19 WPM in the third grade and +5 WPM in the second grade (substantially below expectations of +38 and +45 WPM improvement in third and second grade respectively – see [Table 2](#) above).

Although JSA does not have a program for English language learners, we do have a small number of students whose home language is not English. Teachers were happy to see the exceptional progress made by an ELL second-grader whose reading increased by +61 WPM in one academic year, far exceeding the expectations for second grade students (+45 WPM) (see [Table 2](#) above).

3.3. Middle school students with reading goals (IEP)

Given concern for reading performance challenges observed in Grade 7 students, a middle school classroom teacher reached out to get support from one of the Sounds-Write-trained Grant Wood Area Education Agency support team members. District assessment data suggested that these students were performing up to four years below their current grade level. Initial steps were to collect data using the Sounds-Write Diagnostic Test (to determine code knowledge and segmenting, blending, and phoneme deletion skills) which would be used to design instruction.

Through the partnership, the teacher was willing to try some innovative instructional approaches with the intention of carefully monitoring student growth. The Sounds-Write approach was used in specially designed instruction for one-to-one and small group interventions aimed at eliminating misconceptions of how to sound out words in order to independently and accurately decode unknown words.

Students A and B in [Table 3](#) had not yet learned how to say individual sounds with precision. They were taught to segment words into syllables and individual

sounds – we call this using a ‘spelling voice’. Of the three seventh-graders shown in Table 3, Student B showed the most significant improvement. District assessment data showed a jump in performance from Grade 3 in fall 2020 to Grade 5 in spring 2021. All students who participated in the Sounds-Write instruction showed growth in segmenting, blending, phoneme deletion, and code knowledge (see Table 3).

Table 3. Sounds-Write Diagnostic Test results – fall 2020 to spring 2021 improvement

	Segmenting			Blending			Sound deletion			Code knowledge		
	Fall	Spring	Change	Fall	Spring	Change	Fall	Spring	Change	Fall	Spring	Change
Student A	75%	91%	+16	86%	100%	+14	70%	80%	+10	58%	96%	+38
Student B	55%	100%	+45	85%	93%	+8	30%	80%	+50	48%	94%	+46
Student C	86%	100%	+14	93%	93%	0	70%	80%	+10	78%	94%	+16

During read-aloud tasks, the classroom teacher observed students deliberately applying the skills, code knowledge, and conceptual understandings that were taught through Sounds-Write, which enabled students to access grade level texts. Sounds-Write lessons were met with high levels of engagement and confidence. As evidenced in this project, Sounds-Write holds promise as an effective intervention to correct misconceptions and phonics skill gaps in older students.

4. Recommendations

Seven key practices helped us be successful in our first year of implementation. We recommend them to future teams who plan to use Sounds-Write in their schools.

- Form a Sounds-Write **leadership team** to meet regularly – preferably weekly – to oversee implementation. This kept our work front and center.

- Establish **communication with district leaders** to get approval to pilot Sounds-Write. We kept our district contacts informed about our work and got permission to proceed with training and implementation.
- Build a **central resource bank**, such as Google Drive, making all resources easily accessible to teachers. In the early months of our implementation, each teacher was building their own resources. By the end of the school year, we realized we would all benefit from one location for resources. We assigned two teachers to approve everything that was added to Google Drive.
- Pay teachers a **stipend to take the Sounds-Write course**. Our Principal felt the course time commitment required an additional benefit to teachers, so she advocated for them to receive a stipend.
- Seek **outside funding to supplement implementation costs** – such as decodable readers. We were fortunate to have the support of a local church who encouraged our ‘outside the box’ thinking in terms of literacy practices. They gave generously to our school allowing us to buy decodable readers for the Initial Code* and Extended Code*.
- Establish an **assessment plan** using the Sounds-Write Diagnostic Test as a pre-, post-, and common formative assessments for progress monitoring data collection.
- Provide implementation monitoring resources for teachers to **engage in reflection on Sounds-Write practices** as well as peer coaching to ensure integrity to the Sounds-Write lessons and principles.



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